AMENDMENTS TO THE CLAIMS

Please cancel Claims 2 and 8; amend Claims 1, 7 and 10; and add new Claims 13-22 as follows.

LISTING OF CLAIMS

1. (currently amended) An ejector cycle comprising:

a compressor for compressing refrigerant;

a high-pressure heat exchanger for radiating heat of high-pressure refrigerant discharged from the compressor;

a low-pressure heat exchanger for evaporating low-pressure refrigerant after being decompressed;

an ejector including a nozzle for decompressing and expanding refrigerant flowing from the high-pressure heat exchanger by converting pressure energy of refrigerant to speed energy of the refrigerant, and a pressure-increasing portion that is disposed to increase a pressure of refrigerant by converting the speed energy of refrigerant to the pressure energy of the refrigerant while mixing refrigerant injected from the nozzle and refrigerant sucked from the low-pressure heat exchanger; and

a gas-liquid separator for separating refrigerant from the ejector into gas refrigerant and liquid refrigerant, the gas-liquid separator having a gas refrigerant outlet coupled to a refrigerant suction side of the compressor, and a liquid refrigerant outlet coupled to a refrigerant inlet side of the low-pressure heat exchanger; and

a variable throttle disposed in a refrigerant passage between the high-pressure heat exchanger and the ejector, wherein the variable throttle has a throttle opening degree that is variable such that a refrigerant super-heating degree at a

refrigerant outlet side of the low-pressure heat exchanger becomes in a predetermined range[[.]]; wherein

the variable throttle is disposed to decompress high-pressure refrigerant from the high-pressure heat exchanger, to a gas-liquid two-phase mixture; and

the nozzle of the ejector further decompresses the gas-liquid two-phase mixture in iso-enthalpy.

2. (canceled)

3. (original) The ejector cycle according to claim 1, wherein,

the variable throttle is a mechanical expansion valve having a sensing portion for sensing the refrigerant super-heating degree at the refrigerant outlet side of the low-pressure heat exchanger, and

the variable throttle mechanically operates based on the refrigerant super-heating degree sensed by the sensing portion.

4. (original) The ejector cycle according to claim 1, further comprising

a sensor for detecting the refrigerant super-heating degree at the refrigerant outlet side of the low-pressure heat exchanger, wherein the variable throttle is an electrical throttle that is electrically operated based on the refrigerant super-heating degree detected by the sensor.

5. (original) The ejector cycle according to claim 1, wherein at least a part of the variable throttle is integrated with the ejector.

6. (original) The ejector cycle according to claim 1, wherein the nozzle decompresses refrigerant after being decompressed in the variable throttle.

7. (currently amended) An ejector cycle comprising:

a compressor for compressing refrigerant;

a high-pressure heat exchanger for radiating heat of high-pressure refrigerant discharged from the compressor;

a low-pressure heat exchanger for evaporating low-pressure refrigerant after being decompressed;

an ejector including a nozzle for decompressing and expanding refrigerant flowing from the high-pressure heat exchanger by converting pressure energy of refrigerant to speed energy of the refrigerant, and a pressure-increasing portion that is disposed to increase a pressure of refrigerant by converting the speed energy of refrigerant to the pressure energy of refrigerant while mixing refrigerant injected from the nozzle and refrigerant sucked from the low-pressure heat exchanger; and

a gas-liquid separator for separating refrigerant from the ejector into gas refrigerant and liquid refrigerant, the gas-liquid separator having a gas refrigerant outlet coupled to a refrigerant suction side of the compressor, and a liquid refrigerant outlet coupled to a refrigerant inlet side of the low-pressure heat exchanger; and

a variable throttle disposed in a refrigerant passage between the high-pressure heat exchanger and the ejector, wherein the variable throttle has a throttle opening degree that is variable such that a refrigerant super-heating degree at the refrigerant suction side of the compressor becomes a predetermined range[[.]]; wherein

the variable throttle is disposed to decompress high-pressure refrigerant from the high-pressure heat exchanger, to a gas-liquid two-phase mixture; and

the nozzle of the ejector further decompresses the gas-liquid two-phase mixture in iso-enthalpy.

8. (canceled)

9. (original) The ejector cycle according to claim 7, wherein,

the variable throttle is a mechanical expansion valve having a sensing portion for sensing the refrigerant super-heating degree at the refrigerant suction side of the compressor; and

the variable throttle mechanically operates based on the refrigerant super-heating degree sensed by the sensing portion.

10. (currently amended) The ejector cycle according to claim 7, further comprising:

a sensor for detecting the refrigerant super-heating degree at the refrigerant suction side of the ~~low-pressure heat exchanger~~ compressor, wherein the

variable throttle is an electrical throttle that is electrically operated based on the refrigerant super-heating degree detected by the sensor.

11. (original) The ejector cycle according to claim 7, wherein at least a part of the variable throttle is integrated with the ejector.

12. (original) The ejector cycle according to claim 7, wherein the nozzle decompresses refrigerant after being decompressed in the variable throttle.

13. (new) The ejector cycle according to claim 1, wherein the variable throttle is disposed upstream side of the nozzle in a manner that a center axis of the variable throttle is coaxial with a center axis of the nozzle.

14. (new) The ejector cycle according to claim 13, wherein the variable throttle is provided in a valve body that defines an upstream side refrigerant passage at an upstream side of the variable throttle and a downstream side refrigerant passage at a downstream side of the variable throttle;

the nozzle directly receives the refrigerant from the downstream side refrigerant passage; and

a refrigerant passage from the upstream side refrigerant passage to an outlet of the nozzle is narrowed at the variable throttle, is expanded between the variable throttle and the nozzle, then, is narrowed at the nozzle and is expanded after the nozzle.

15. (new) The ejector cycle according to claim 14, wherein the downstream side refrigerant passage is formed to boil the refrigerant at an inlet side of the nozzle, and the nozzle is formed to further boil the refrigerant.

16. (new) The ejector cycle according to claim 14, wherein the downstream side refrigerant passage is formed to generate bubbles in the refrigerant and generate boiling cores at the inlet side of the throttle, and the nozzle is formed to further boil the refrigerant with the boiling cores.

17. (new) The ejector cycle according to claim 7, wherein the variable throttle is disposed upstream side of the nozzle in a manner that a center axis of the variable throttle is coaxial with a center axis of the nozzle.

18. (new) The ejector cycle according to claim 17, wherein the variable throttle is provided in a valve body that defines an upstream side refrigerant passage at an upstream side of the variable throttle and a downstream side refrigerant passage at a downstream side of the variable throttle;

the nozzle directly receives the refrigerant from the downstream side refrigerant passage; and

a refrigerant passage from the upstream side refrigerant passage to an outlet of the nozzle is narrowed at the variable throttle, is expanded between the

variable throttle and the nozzle, then, is narrowed at the nozzle and is expanded after the nozzle.

19. (new) The ejector cycle according to claim 18, wherein the downstream side refrigerant passage is formed to boil the refrigerant at an inlet side of the nozzle, and the nozzle is formed to further boil the refrigerant.

20. (new) The ejector cycle according to claim 18, wherein the downstream side refrigerant passage is formed to generate bubbles in the refrigerant and generate boiling cores at the inlet side of the throttle, and the nozzle is formed to further boil the refrigerant with the boiling cores.

21. (new) An ejector cycle comprising:

a compressor for compressing refrigerant;

a high-pressure heat exchanger for radiating heat of high-pressure refrigerant discharged from the compressor;

a low-pressure heat exchanger for evaporating low-pressure refrigerant after being decompressed;

an ejector including a fixed nozzle for decompressing and expanding refrigerant flowing from the high-pressure heat exchanger by converting pressure energy of refrigerant to speed energy of the refrigerant, and a pressure-increasing portion that is disposed to increase a pressure of refrigerant by converting the speed energy of refrigerant to the pressure energy of refrigerant while mixing refrigerant

injected from the nozzle and refrigerant sucked from the low-pressure heat exchanger; and

a gas-liquid separator for separating refrigerant from the ejector into gas refrigerant and liquid refrigerant, the gas-liquid separator having a gas refrigerant outlet coupled to a refrigerant suction side of the compressor, and a liquid refrigerant outlet coupled to a refrigerant inlet side of the low-pressure heat exchanger; and

a variable throttle disposed upstream of said fixed nozzle in a refrigerant passage between the high-pressure heat exchanger and the ejector, wherein the variable throttle has a throttle opening degree that is variable such that a refrigerant super-heating degree at a refrigerant outlet side of the low-pressure heat exchanger becomes in a predetermined range.

22. (new) An ejector cycle comprising:

a compressor for compressing refrigerant;

a high-pressure heat exchanger for radiating heat of high-pressure refrigerant discharged from the compressor;

a low-pressure heat exchanger for evaporating low-pressure refrigerant after being decompressed;

an ejector including a fixed nozzle for decompressing and expanding refrigerant flowing from the high-pressure heat exchanger by converting pressure energy of refrigerant to speed energy of the refrigerant, and a pressure-increasing portion that is disposed to increase a pressure of refrigerant by converting the speed

injected from the nozzle and refrigerant sucked from the low-pressure heat exchanger; and

a gas-liquid separator for separating refrigerant from the ejector into gas refrigerant and liquid refrigerant, the gas-liquid separator having a gas refrigerant outlet coupled to a refrigerant suction side of the compressor, and a liquid refrigerant outlet coupled to a refrigerant inlet side of the low-pressure heat exchanger; and

a variable throttle disposed upstream of said fixed nozzle in a refrigerant passage between the high-pressure heat exchanger and the ejector, wherein the variable throttle has a throttle opening degree that is variable such that a refrigerant super-heating degree at the refrigerant suction side of the compressor becomes in a predetermined range.